Water Plan Update

Objectives Web-a-thon
Invest in New Water Technology
June 13, 2013

MEETING SUMMARY

CALIFORNIA WATER PLAN UPDATE 2013
NEW WATER TECHNOLOGY OBJECTIVE
NOON – 1:00 P.M.
815 S STREET, SACRAMENTO, CA

Meeting Objective

Discuss and suggest revisions for the Related Actions associated with the Update 2013 Objective relating to New Water Technology:

> "Identify and fund applied research and pilot studies on emerging water technology to make them attainable and more cost effective."

Welcome, Introductions and Agenda Review

The Update 2013 Objectives Web-a-thon was held on June13-14, 2013 to discuss the draft 17 Objectives and the associated Related Action for the Water Plan. Introductions were made around the room and online. Kamyar Guivetchi, Manager, Statewide Integrated Water Management, welcomed everyone and noted that an online wrap up session will be conducted on July 9th, to conclude any items needing additional discussion. The content reviewed during the web-a-thon will inform the Implementation Plan for Update 2013. He explained that the first few pages of the workbook provide definitions of terms and the Water Plan mission, vision and goals – which sets the context for the objectives and related actions. A brief review of the Water Technology objective and related actions would be followed by discussion on the text.

Overview

Jose Alarcon, DWR Project Team, provided a brief background on how the objectives and related actions were developed. He and Francisco Guzman have reviewed the 37 Featured State Plans, related state agency plans with bearing on the Water Plan, and correlated the respective recommendations with the Water Plan objectives. These were forwarded to the subject matter experts for consideration in updating the related actions for each objective. Collectively, the objectives identify what is needed to accomplish the goals of the Water Plan. The related actions represent what is needed to accomplish each particular objective.

The workbook contains a column for performance measures, which will help track each action and inform the next Water Plan Progress Report. Draft measures have been proposed for some of the objectives, and feedback is welcomed on potential performance measures – as well as the objectives and related actions.

Document Walk Through

Karl Longley, Co-Chair, Update 2013 Water Technology Caucus, explained how the Objective and Related Actions were developed in conjunction with an effort by the California Council of Science and Technology (CCST). Funded by the Bechtel Foundation, Jude Laspa has been heading up the effort which began with a water technology survey. Focus groups further developed the survey results which were then presented at three public workshops.

The CCST report will appear as an appendix in Update 2013 and will include a diagram of the California water cycle – beginning with the natural system, moving to pre-use management and engineered delivery systems, then water use and potential reuse, and returning to the natural system. The 9 Related Actions found on pages 37-42 of the workbook.

Related Actions

The proposed Related Actions, and the ensuing discussion, are presented below. Please note that the actions below have been abridged from the original text and the sub-actions are not included:

General Discussion

- None of the actions identify a responsible agency. To know what's going on, we need to know who is taking the lead. The sub-actions might move to performance measures.
- An offline request had been made to DWR asking how ag applied water was calculated. The complex response was not understandable. A basic description is requested for understanding how ag-applied water is calculated, so that water suppliers and growers can know what is happening. If drones come into use could SEBOL be used?
- There are a lot of policy prescriptions being made under the vehicle of water technology. The actions relating to water conservation need to move to Objective 2, if it's a policy prescription. This Objective should be about advancing the development and use of tools, rather than on the target that the tool is designed to regulate.
- There is a lot of repetition. Water measurement is addressed in Objective 11 (action 1, d) and Objective 10 (action 9). Some of it ties to Objective 2. The action should be correctly placed with an appropriate level of detail. It looks like actions have been developed independently and not vetted with the other subject matter venues. Kamyar Guivetchi agreed that it can be difficult to coordinate the multiple venues and authors. The Objectives web-a-thon is intended to help being the vetting and cross-referencing of the Related Actions. It is important that a policy incorporated in one objective be threaded through the other objectives, if they are related, and to separate out the policy and technology aspects. The authors are trying to tell a complete story and have a difficult time releasing a related action (or associated topic) to appear under a different objective. There may be multiple locations for a given action and it will need to be transparent if that occurs.

- There are several references to implementing development. Typically, you develop something and then implement its application – you might want to change the language.
- An inquiry was made about discussing options to remove nitrates. It was noted that the State Water Board will have an item on nitrate removal in September.
- Add language to discuss private sector investment.
- Add language on public-private partnerships.
- Link to Chapter 7 on Finance.

1. Advance new water technology to improve Data Management and Modeling.

   Item #a addresses the disconnect between available data and modeling by developing standards for consistency; Item #b focuses on the need for a locally maintained distributed databases that connect with a common data portal, and meta-data QA/QC; Item #c relates to data portals and translating data into information; and Item #d flags the need for a water use and quality measurement and reporting strategy.

   Discussion:

   - Will the requirements change what is being asked for from data provides, such as water suppliers? Will information be in the right format if suppliers are complying with SB-x7? Water suppliers can currently submit data and plans in a number of ways. DWR is experimenting with an online reporting tool

     Mr. Longley explained that this is really talking about obtaining current tools for modeling and data management, and getting people from across the state working together in this area. The goal is to find a way to better share information. This action is talking about developing data to support modeling. This action doesn't address reporting.

2. Advance new water technology to improve In Situ Data Acquisition.

   Item #a discusses the need for compatibility among data acquisition equipment and components; Item #b describe analytical capabilities for discerning constituent concentrations; and Item #c points to the need for durable and long-lasting sensors and analytical procedures. This action is also about better coordination with national labs.

   Discussion:

   - Reword "In Situ Data Acquisition" (jargon).

3. Advance new water technology to improve Remote Sensing.

   Item #a focuses on protocols and data acquisition; Item #b emphasizes fresh water sensors; Item #c discusses data that augments satellite snowpack data; Item #d relates to

durable sensors; Item #e proposes partnerships to encourage better use of existing resources; and Item #f refers to data and modeling compatibility. Mr. Longley mentioned that Item #d also relates to grid-based compatibility.

Discussion:

- Detecting effective precipitation could be added here (at CIMIS stations, by using spare channels and data loggers).
- This action could also add the possibility of detecting topsoil organic matter in headwater regions to monitor change in this parameter, which affects the resiliency of holding precipitation throughout the state. This could be done with infra-red.

4. Advance new water technology to improve efficiencies for the Water-Energy Nexus.

   Item #a call for greater use of smart grid technologies; Item #b speaks to appropriate water delivery pressure; Item #c promotes low water consumption technologies in the energy sector; Item #d highlights energy harvesting; and Item #e looks at efficiencies for water treatment and transport processes.

   Discussion:

   - Don't neglect wave-energy.
   - Item 4-c: Regarding the increased use of low-water consumption energy technologies, there are propriety water uses for geo-thermal that are highly water intensive. The state does not seem to have standards for geothermal water use, which would be helpful to develop.

5. Advance new water technology to improve Membrane Water Treatment.

   Item #a calls for more durable and energy efficient general membranes capable of treating a broader range of contaminants; Item #b targets energy recovery from high-pressure membrane processes; Item #c seeks greater use of concentrate diffusion technologies current used outside of California; and Item #d encourages development of smart control technology.

   Discussion:

   - Brackish water costs $500/AF to reclaim. Improve those desal technologies to reduce costs.
   - It seems that private sector is chugging along with membrane technology. Mr. Longley mentioned that there will be a discussion on what is happening with private and there is a lot of improvement in this area. It's a technology issue governed by the properties of the membranes.

6. Advance new water technology to improve Biological Water Treatment.

   Item #a promotes biological processes that meet public health requirements for direct injection in drinking water systems; Item #b encourages use of engineered wetlands and meadows for water treatment; Item #c highlights the benefits associated with animal wastes digestive systems; and Item #d reference to smart control technology and sensor development. This action also encompasses removal of nitrates.

   Discussion:

   - This applies to wastewater as well. There is enzyme development and recombinant bugs that should be included in this section.

7. Advance new water technology to improve Watershed Management.

   Item #a focuses on software to better model climate change impacts on watersheds; Item #b calls out opportunities for improved data collection on surface and groundwater parameters; and Item #c describes expanded use of suitable floodplains for groundwater recharge.

   Discussion:

   - No comments.

8. Advance new water technology to improve Agricultural Water Use Efficiency.

   Item #a focuses on water measurement and soil moisture sensing; Item #b addresses water distribution systems and irrigation scheduling; Item #c looks at water management; Item #d suggests reuse and matching water quality to use; Item #e ties to environmental benefits from ag water and lands; Item #f encourages multiple use opportunities; Item #g describes pressurized irrigation systems and shifts away from water intense crops and permanent crops; and Item #h references the need to better understand third-party impacts associated with large-scale changes in agricultural practices.

   Discussion:

   - Items #b and c look like efficient water management practices (ewmps). Are we proposing new practices, or are these consistent with existing practices? These items needed to include the "cost-effective" descriptor, as is currently in place for Item #d. We need to be sure to not ask growers to do things that extend beyond what is required by SB-x7.
   - Item #e looks like it belongs in Objective #5 with environmental stewardship.
   - Item #g – these actions are market-driven activities from ag's perspective and don't belong in the Water Plan. A follow-up comment agrees that ag is a business. If we say there is an industry-wide mandate, it had better be cost-efficient. These

recommendations to advance water technology need to be tied to the financing section. Another follow-up comment expressed surprise that this keeps coming up. There is something in the Sustainability Indicators discussion about regional water balances around the world. We export embedded water. It would be good to reconsider this sentence.

- Item #8-h – Chatham House has some good papers on food supply reliance of Great Britain.
- For ag water use efficiency would benefit from being defined as crop-per-drop rather than uniform application; however, another participant mentioned that crop-per-drop is contrary to SB-x7. While crop-per-drop can yield helpful information over the long-term, it doesn't address SB-x7.
- Site-specific irrigation for long-term crops would look at three years and out.

9. Advance new water technology to improve Urban Water Use Efficiency.

   Item #a proposes enhanced metering infrastructure; Item #b encourages incentive-based water pricing; Item #c discusses lower water use appliances and cleaning technologies; Item #d addresses water reuse and matching water quality to use: Item #e supports enhanced leak detection; and Item #f relates to less water intense landscaping.

   Discussion:

   - Another component for Urban WUE is the pattern of land use. Tools are needed to display the comparison of land use choices. The results must be usable and accessible by local decision-makers. The tools would need to include the different approaches, water supply benefits, flood benefits, costs of O & M, and avoided costs. There is a tie-in to ag lands stewardship.
   - 9f, low-water use landscaping, needs to look at the effect on urban temperatures.

Attendance

In Room

Carl Hauge, California Water Foundation
Karl Longley, California Water Institute, UC Fresno
Bob Siegfried, Carmel Area Wastewater District

Jose Alarcon, DWR, Water Quality Lead
Megan Fidell, DWR, RMS Coordinator, Progress Report Lead
Kamyar Guivetchi, DWR, Manager, Statewide Integrated Water Management
Francisco Guzman, DWR, Companion Plans and Objectives Lead
Rich Juricich, DWR, Data and Analysis Lead
Jennifer Kofoid, DWR, Water Technology Lead
Paul Massera, DWR, Water Plan Program Manager
Lewis Moeller, DWR, Water Plan Project Manager
Elizabeth Patterson, DWR, Land Use Lead
Maury Roos, DWR, Chief Hydrologist

Lisa Beutler, MWH, Water Plan Executive Facilitator
Judie Talbot, CCP, Facilitator

Webinar

Angela Anderson, Bureau of Reclamation
Erika Barraza, Carollo Engineers
Marilyn Boehnke, California Department of Food and Agriculture
Dave Bolland, Association of California Water Agencies
Rick Breuer, State Water Board
Grace Chan, Metropolitan Water District of Southern California
Ronnie Cohen, journalist
Rebecca Crebbin-Coates, Planning and Conservation League
Jerry De La Piedra, Santa Clara Valley Water District
Dudley McFadden, Sacramento Municipal Utility District
Anisa Divine, Imperial Irrigation District
Debbie Espe, San Diego County Water Agency
Aaron Fukuda, Tulare Irrigation District
Milasol Gaslan, Santa Ana Regional Water Board
Carol Hall, Kleinfelder
Jack Hawks, California Water Association
Earle Hartling, Los Angeles County Sanitation District
Ashley Indieri, Family Water Alliance
Sachiko Itagaki, Kennedy Jenks
Alex Kim, UC Irvine

Kathy Mannion, Regional Council of Rural Counties
Margie Namba, Granite Construction
Eric Osterling, Kings River Conservation District
Jodi Pontureri, State Water Board
Chris Potter, California Resources Agency (Ocean Grants and Wetlands)
Tony St. Amant, Water Policy Advocate
Sergio Vargas, Ventura County Watershed Protection District
Mike Wade, California Farm Water Coalition
Betsy Walton, California Emergency Management Agency
Marsha Westropp, Orange County Water District
Emilia Wisniewski, East Bay Municipal Utility District
Betty Yee, Central Valley Regional Water Board
Mary Zauner, Los Angeles County Sanitation District
David Zoldoske, California Water Institute, UC Fresno

Carmel Brown, DWR, Executive Assistant, Integrated Water Management
Abby Carevic, DWR, Northern Region Office, Water Supply Evaluations
Nancy King, DWR, Water Recycling and Desalination
John Kirk, DWR, South-Central Region Office, Groundwater Section
Nancy Miller, DWR, Water Recycling and Desalination
Salomon Miranda, DWR, Floodplain Management
Toni Pezzetti, DWR, Water Recycling and Desalination